



9.22 TOWN OF WAPPINGER

This section presents the jurisdictional annex for the Town of Wappinger.

9.22.1 Hazard Mitigation Plan Point of Contact

The following individuals have been identified as the hazard mitigation plan's primary and alternate points of contact.

Primary Point of Contact	Alternate Point of Contact
Barbara Roberti, Flood Plain Administrator & Zoning Administrator 20 Middlebush Rd., Wappingers Falls NY 12590 845-297-1373 broberti@townofwappinger.us	Susan Dao, Code Enforcement Officer 20 Middlebush Rd., Wappingers Falls NY 12590 814-456-9621 sdao@townofwappinger.us

9.22.2 Municipal Profile

The Town of Wappinger is located in the southwestern quadrant of Dutchess County, NY. It is bordered to the east by the Town of East Fishkill, to the north by the Towns of LaGrange and Poughkeepsie, to the south by the Town of Fishkill, and to the west by the Hudson River, Orange County, and Ulster County. The Town is home to several hamlets including Chelsea, Diddell, Middlebush, Hughsonville, Myers Corners, New Hackensack, and Swartwoutville. The Town projects a significant growth of its elderly population over the next 20 years (currently 13.4 percent of the population). Additionally, the Town has identified a mismatch between the need for smaller housing units for individual householders, including senior citizens, and the large supply of local 3+ bedroom housing.

The Town's primary transportation corridors include U.S. Route 9, State Route 9D, State Route 82, and State Route 376. The Metro-North's Hudson Line also runs through the Town, offering residents relatively easy access to commuter rail with a nearby station at New Hamburg. The Town of Wappinger and its Hamlet of New Hackensack are also notable for serving as the site of the Dutchess County Airport. The Town's more vulnerable structures and critical facilities will be discussed in further detail throughout the Hazard Mitigation Plan and this annex.

The Town of Wappinger comprises a total area of 28.53 square miles, of which 1.48 square miles is water and 27.05 square miles is land. The Town's is proximate and potentially vulnerable to the following noteworthy waterways – Wappinger Creek, Hudson River, and Sprout Creek.

According to the 2010 U.S. Census, the population of the Town was 27,048.

Growth/Development Trends

The following table summarizes recent residential/commercial development since 2010 to present and any known or anticipated major residential/commercial development and major infrastructure development that has been identified in the next five years within the municipality. Refer to the map in Section 9.22.8 of this annex which illustrates the hazard areas along with the location of potential new development.

Table 9.22-1. Growth and Development

Property or Development Name	Type (e.g. Res., Comm.)	# of Units / Structures	Location (address and/or Parcel ID)	Known Hazard Zone(s)	Description/Status of Development
Recent Development from 2010 to present					



Property or Development Name	Type (e.g. Res., Comm.)	# of Units / Structures	Location (address and/or Parcel ID)	Known Hazard Zone(s)	Description/Status of Development
Nature Preserve	Residential	53	CR 28 and NYS 9D	None Known	Under Construction
New York City Department of Environmental Protection (NYCDEP) Rondout-West Branch Tunnel (RWBT) Repair	Tunnel Bypass	N/A	River Road North	Floodplain	Under Construction
Meadowood	Residential	25	CR 28 and CR 94	None Known	Under Construction
Hilltop/Regency	Residential	225	CR 94	Floodplain	Under Construction
Known or Anticipated Development in the Next Five (5) Years					
Chelsea Farms	Residential	19	Chelsea Road and River Road	Floodplain	Pending Final Approval

* Only location-specific hazard zones or vulnerabilities identified.

9.22.3 Natural Hazard Event History Specific to the Municipality

Dutchess County has a history of natural and non-natural hazard events as detailed in Volume I, Section 5.0 of this plan. A summary of historical events is provided in each of the hazard profiles and includes a chronology of events that have affected the County and its municipalities. For the purpose of this Plan, events that have occurred in the County from 2008 to present were summarized to indicate the range and impact of hazard events in the community. Information regarding specific damages is included, if available, based on reference material or local sources. This information is presented in the table below. For details of these and additional events, refer to Volume I, Section 5.0 of this plan.

Table 9.22-2. Hazard Event History

Dates of Event	Event Type	FEMA Declaration # (If Applicable)	County Designated?	Summary of Damages/Losses
February 24, 2010	Heavy Snow	N/A	N/A	Brush pick-up 3-8-2010 through 6-8-2010. Grinding brush (Rancort Co.) (Contractor). The Town incurred regular expenses for payroll and equipment between the dates of March 8 and June 8 for brush removal on Town roads. The Town incurred an extra expense for the rental of the Rancort grinder to chip the brush and debris.
December 26-27, 2010	Severe Winter Storm and Snowstorm / Nor'Easter	DR-1957	Yes	18 inches of snow. Snow removal 12-26 & 27, 2010. Damages included a number of roof collapses. The Town incurred regular expenses and overtime payroll expenses, as well as equipment costs, for brush removal and snowfall removal from Town roads.
August 26 – September 5, 2011	Hurricane Irene	DR-4020	Yes	Kent Road closed and culvert replaced at Lake Oniad outlet. Scattered power outages through Town.
October 29-30, 2011	Nor'Easter, Heavy Snow	N/A	N/A	16 inches of snow on 10-29-2011. Pick up brush 10-31-2011 through 11-29-2011. The Town incurred regular time and overtime payroll expenses and equipment expenses for the Highway Department to clear the 16 inches of snowfall from public roads.
October 27 – November 8, 2012	Hurricane Sandy	EM-3351	Yes	Clean up storm damage 10-29-2012 through 11-2-2012. Various power outages throughout Town during storm – Peak of 5 days of lost power at Highway Department. Additionally, the pavilion at the Robinson Lane recreational area lost some shingles, and local docks suffered railing damage.



9.22.4 Hazard Vulnerabilities and Ranking

The hazard profiles in Section 5.0 of this plan have detailed information regarding each plan participant's vulnerability to the identified hazards. The following summarizes the hazard vulnerabilities and their ranking in the Town of Wappinger. For additional vulnerability information relevant to this jurisdiction, refer to Section 5.0.

Hazard Risk/Vulnerability Risk Ranking

The table below summarizes the hazard risk/vulnerability rankings of potential hazards for the Town of Wappinger.

Table 9.22-3. Hazard Risk/Vulnerability Risk Ranking

Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard ^{a, c}	Probability of Occurrence	Risk Ranking Score (Probability x Impact)	Hazard Ranking ^b
Coastal Storm	100-year MRP: \$3,722,829.00 500-year MRP: \$22,535,723.00 Annualized: \$278,214.00	Frequent	48	High
Drought	Damage estimate not available	Frequent	42	High
Earthquake	100-Year GBS: \$0 500-Year GBS: \$973,318 2,500-Year GBS: \$15,062,098	Occasional	28	Medium
Extreme Temperature	Damage estimate not available	Frequent	21	Medium
Flood	1% Annual Chance: \$157,179,263	Frequent	36	High
Severe Storm	100-Year MRP: \$3,722,829 500-year MRP: \$22,535,723 Annualized: \$278,214	Frequent	48	High
Winter Storm	1% GBS: \$36,521,654 5% GBS: \$182,608,271	Frequent	51	High
Wildfire	Estimated Value in the WUI: \$2,973,904,465	Frequent	48	High

Notes:

GBS = General building stock; MRP = Mean return period.

- The general building stock valuation is based on the custom inventory generated for the municipality and based on improved value.
- High = Total hazard priority risk ranking score of 31 and above
Medium = Total hazard priority risk ranking of 20-30+
Low = Total hazard risk ranking below 20
- Loss estimates for the severe storm and severe winter storm hazards are structural values only and do not include the estimated value of contents. The earthquake and hurricane wind hazards were evaluated by Census tract. The Census tracts do not exactly align with municipal boundaries; therefore, a total is reported for each Town inclusive of the Villages. Loss estimates for the flood and earthquake hazards represent both structure and contents. Potential flood loss estimates were generated using HAZUS-MH 2.2 and the 2011 FEMA DFIRM for the 1-percent annual chance event. For the wildfire hazard, the improved value and estimated contents of buildings located within the identified hazard zones is provided.

National Flood Insurance Program (NFIP) Summary

The following table summarizes the NFIP statistics for the Town of Wappinger.



Table 9.22-4. NFIP Summary

Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 100-year Boundary (3)
Town of Wappinger	159	21	\$313,495.17	2	0	90

Source: FEMA Region 2, 2014

(1) Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA Region 2, and are current as of 12/31/2014. The total number of repetitive loss properties does not include the severe repetitive loss properties. The number of claims represents claims closed by 12/31/14.

(2) Total building and content losses from the claims file provided by FEMA Region 2.

(3) The policies inside and outside of the flood zones is based on the latitude and longitude provided by FEMA Region 2 in the policy file.

Notes: FEMA noted that where there is more than one entry for a property, there may be more than one policy in force or more than one GIS possibility.

A zero percentage denotes less than 1/100th percentage and not zero damages or vulnerability as may be the case.

Number of policies and claims and claims total exclude properties located outside County boundary, based on provided latitude and longitude.

Critical Facilities

The table below presents HAZUS-MH estimates of the damage and loss of use to critical facilities in the community as a result of a 1- and 0.2-percent annual chance flood events.

Table 9.22-5. Potential Flood Losses to Critical Facilities

Name	Type	Exposure		Potential Loss from 1% Flood Event		
		1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	Days to 100-Percent ⁽²⁾
7-Eleven #25393	Hazmat	X	X	-	-	-
Mid-Point Park – Royal Ridge WTP	Wastewater Treatment Facility	X	X	-	-	-
Rockingham Farms WTP	Wastewater Treatment Facility		X	-	-	-
Wappinger Well	Well	X	X	-	-	-

Source: Dutchess County, NYSGIS, Hazus-MH

Note (1): HAZUS-MH 2.2 provides a general indication of the maximum restoration time for 100% operations. Clearly, a great deal of effort is needed to quickly restore essential facilities to full functionality; therefore this will be an indication of the maximum downtime (HAZUS-MH 2.1 User Manual).

Note (2): In some cases, a facility may be located in the DFIRM flood hazard boundary; however HAZUS did not calculate potential loss. This may be because the depth of flooding does not amount to any damages to the structure according to the depth damage function used in HAZUS for that facility type. Further, HAZUS-MH may estimate potential damage to a facility that is outside the DFIRM because the model generated a depth grid beyond the DFIRM boundaries.

NA Not available

X Facility located within the DFIRM boundary

- Not calculated by HAZUS-MH 2.2

Other Vulnerabilities Identified

The municipality has identified the following vulnerabilities within their community:

- Robinson Lane (bridge over Sprout Creek) Road has been known to flood.
- River Road in Chelsea area.
- Front Street in Chelsea area.
- TransCare EMS services the Town of Pawling, and has reported that electricity and communications utility infrastructure within the locality is prone to power failure, and not sufficiently disaster resistant to support EMS functions during and after natural hazard events. Further, the company recommends



improving communications regarding road closures and pending road closures during natural hazard events between the Town and private emergency response companies and personnel.

- The Hughsonville Fire Department in the Town reported that its facilities are not sufficiently disaster resistant.

9.22.5 Capability Assessment

This section identifies the following capabilities of the local jurisdiction:

- Planning and regulatory capability
- Administrative and technical capability
- Fiscal capability
- Community classification
- National Flood Insurance Program
- Integration of Mitigation Planning into Existing and Future Planning Mechanisms

Planning and Regulatory Capability

The table below summarizes the regulatory tools that are available to the Town of Wappinger.

Table 9.22-6. Planning and Regulatory Tools

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No)	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
Planning Capability				
Master Plan	Yes (10/27/2010)	Local	Town Board	Comprehensive Plan
Capital Improvements Plan	No	-	-	-
Floodplain Management / Basin Plan	No	-	-	-
Stormwater Management Plan	No	-	-	-
Open Space Plan	No	-	-	-
Stream Corridor Management Plan	No	-	-	-
Watershed Management or Protection Plan	No	-	-	-
Economic Development Plan	No	-	-	-
Comprehensive Emergency Management Plan	Yes (May 2006)	Local	Town Board	Town of Wappinger Emergency Preparedness Plan
Emergency Response Plan	Yes (May 2006)	Local	Town Board	Town of Wappinger Emergency Preparedness Plan
Post-Disaster Recovery Plan	No	-	-	-
Transportation Plan	No	-	-	-
Strategic Recovery Planning Report	No	-	-	-
Other Plans:	No	-	-	-
Regulatory Capability				
Building Code	Yes (9/25/2006)	State and Local	Town Board	Chapter 85
Zoning Ordinance	Yes	Local	Zoning	Chapter 240



Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No)	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
	(11/25/1996)			
Subdivision Ordinance	Yes (10/14/1987)	Local	Zoning	Chapter 217
NFIP Flood Damage Prevention Ordinance	Yes (3/12/2012)	Federal, State, Local	Zoning	Chapter 133
NFIP: Cumulative Substantial Damages	Yes (3/12/2012)	Federal	Zoning	Chapter 133-4 Definitions
NFIP: Freeboard	Yes (3/12/2012)	Federal, State, Local	Zoning	State-mandated BFE+2 for single and two-family residential construction, BFE+1 for all other construction types 133-16, 17, and 18
Growth Management Ordinances	No	-	-	-
Site Plan Review Requirements	Yes (11/25/1996)	State, Local	Planning Board and Zoning	Chapter 240-82:93
Stormwater Management Ordinance	Yes (6/11/2007)	Federal, State, Local	Town Engineer	Chapter 213-13 et seg
Municipal Separate Storm Sewer System (MS4)	Yes (6/11/2007)	Federal, State, Local	Stormwater Office	Chapter 213-13 et seg
Natural Hazard Ordinance	No	-	-	-
Post-Disaster Recovery Ordinance	No	-	-	-
Real Estate Disclosure Requirement	Yes	State	-	NYS mandate, Property Condition Disclosure Act, NY Code - Article 14 §460-467
Other [Special Purpose Ordinances (i.e., sensitive areas, steep slope)]	Yes (10/14/1987)	Local	Planning Board	Chapter 217-3z Wetlands, Water Bodies, Water Courses, and Steep Slopes

Administrative and Technical Capability

The table below summarizes potential staff and personnel resources available to the Town of Wappinger.

Table 9.22-7. Administrative and Technical Capabilities

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
Administrative Capability		
Planning Board	Yes	Zoning
Mitigation Planning Committee	No	-
Environmental Board/Commission	No	-
Open Space Board/Committee	No	-
Economic Development Commission/Committee	No	-
Maintenance Programs to Reduce Risk	No	-
Mutual Aid Agreements	Yes (5/10/1999)	Town Supervisor
Technical/Staffing Capability		
Planner(s) or Engineer(s) with knowledge of land development and land management practices	Yes	Planner and Engineer



Resources	Is this in place? (Yes or No)	Department/ Agency/Position
Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Yes	Engineer to the Town
Planners or engineers with an understanding of natural hazards	Yes	Planner and Engineer
NFIP Floodplain Administrator	Yes	Zoning Administrator
Surveyor(s)	No	-
Personnel skilled or trained in GIS and/or HAZUS-MH applications	No	-
Scientist familiar with natural hazards	No	-
Emergency Manager	No	-
Grant Writer(s)	No	-
Staff with expertise or training in benefit/cost analysis	Yes	Town Engineer
Professionals trained in conducting damage assessments	No	-

Fiscal Capability

The table below summarizes financial resources available to the Town of Wappinger.

Table 9.22-8. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	No
Capital Improvements Project Funding	No
Authority to Levy Taxes for specific purposes	Yes
User fees for water, sewer, gas or electric service	Yes
Impact Fees for homebuyers or developers of new development/homes	No
Stormwater Utility Fee	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Don't Know
Incur debt through private activity bonds	Don't Know
Withhold public expenditures in hazard-prone areas	Don't Know
Other Federal or State Funding Programs	Don't Know
Open Space Acquisition Funding Programs	Don't Know
Other	N/A

Community Classifications

The table below summarizes classifications for community program available to the Town of Wappinger.

Table 9.22-9. Community Classifications

Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No (In Progress)	N/A	N/A
Building Code Effectiveness Grading Schedule (BCEGS)	No	N/A	N/A
Public Protection (ISO Fire Protection Classes 1	Yes	-	-



Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
to 10)			
Storm Ready	No	N/A	N/A
Firewise	No	N/A	N/A
Disaster/Safety Programs in/for Schools	No	N/A	N/A
Organizations with Mitigation Focus (advocacy group, non-government)	No	N/A	N/A
Public Education Program/Outreach (through website, social media)	No	N/A	N/A
Public-Private Partnerships	No	N/A	N/A

N/A = Not applicable. NP = Not participating. - = Unavailable. TBD = To be determined.

The classifications listed above relate to the community's ability to provide effective services to lessen its vulnerability to the hazards identified. These classifications can be viewed as a gauge of the community's capabilities in all phases of emergency management (preparedness, response, recovery and mitigation) and are used as an underwriting parameter for determining the costs of various forms of insurance. The CRS class applies to flood insurance while the BCEGS and Public Protection classifications apply to standard property insurance. CRS classifications range on a scale of 1 to 10 with class 1 being the best possible classification, and class 10 representing no classification benefit. Firewise classifications include a higher classification when the subject property is located beyond 1000 feet of a creditable fire hydrant and is within 5 road miles of a recognized Fire Station.

Criteria for classification credits are outlined in the following documents:

- The Community Rating System Coordinators Manual
- The Building Code Effectiveness Grading Schedule
- The ISO Mitigation online ISO's Public Protection website at <http://www.isomitigation.com/ppc/0000/ppc0001.html>
- The National Weather Service Storm Ready website at <http://www.weather.gov/stormready/howto.htm>
- The National Firewise Communities website at <http://firewise.org/>

Self-Assessment of Capability

The table below provides an approximate measure of the Town of Wappinger's capability to work in a hazard-mitigation capacity and/or effectively implement hazard mitigation strategies to reduce hazard vulnerabilities.

Table 9.22-10. Self-Assessment Capability for the Municipality

Area	Degree of Hazard Mitigation Capability		
	Limited (If limited, what are your obstacles?)*	Moderate	High
Planning and Regulatory Capability			X
Administrative and Technical Capability			X
Fiscal Capability	X (Not Aware of FEMA Mitigation Funding Sources)		
Community Political Capability		X	
Community Resiliency Capability		X	



Area	Degree of Hazard Mitigation Capability		
	Limited (If limited, what are your obstacles?)*	Moderate	High
Capability to Integrate Mitigation into Municipal Processes and Activities.		X	

NFIP Floodplain Administrator

Barbara Roberti, Town of Wappinger Zoning Administrator and Floodplain Administrator

Flood Vulnerability Summary

As supported by the low number of claims and policies described later in this section, the Town of Wappinger has a relatively low vulnerability to flood damage. The municipality does not maintain active inventories of flood-damaged properties and does not know of any property owners who feel the need for mitigation or protective measures, such as elevation or acquisition. The Town does not make substantial damage estimates for flood events, and any property mitigation projects must currently be funded at the property owner's expense.

Although some public infrastructure was damaged as a result of Hurricane Irene, no privately owned structures were damaged. The situation during Hurricane Sandy was similar, as the pavilion at the Robinson Lane recreational area experienced slight damage and local docks suffered railing damage; however, power outages and general cleanup from the storm were the Town's most significant repairs. In addition, the Town notes flooding to be an infrequent occurrence. Despite the low vulnerability to flooding, the Town pursues flood mitigation opportunities, including education and new regulations, where applicable or beneficial.

Resources

The community FDPO identifies the Zoning Administrator or the Code Enforcement Officer as the local NFIP Floodplain Administrator, currently Barbara Roberti, for which floodplain administration is an auxiliary duty.

It is the intent and purpose of the NFIP Floodplain Administrator to promote the public health, safety, and general welfare and to minimize public and private losses due to flood conditions in specific areas. Floodplain manager duties include: regulate uses which are dangerous to health, safety and property due to water or erosion hazards or which result in damaging increases in erosion or in flood heights or velocities; require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction; control the alteration of natural floodplains, stream channels, and natural protective barriers which are involved in the accommodation of floodwaters; control filling, grading, dredging and other development which may increase erosion or flood damages; regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards to other lands; and qualify for and maintain participation in the National Flood Insurance Program. The Floodplain Administrator primarily attends to permit reviews, inspections, and GIS work in her role. She is supported by the Town Engineer for assistance, as needed. Securing adequate funding sources was the major concern noted in ensuring as effective a flood management program as possible for the Town.

The Floodplain Administrator feels she is adequately supported and trained to fulfill his responsibilities as the municipal floodplain administrator; however, he would participate in any continuing education or certification training on floodplain management and the CRS program were it offered for all local floodplain administrators.



Compliance History

Since 1978, 21 claims have been paid totaling \$313,495. Following Hurricane Irene, the damage throughout the Town primarily included power outages, although Kent Road closed and the culvert at the Lake Oniad outlet required replacement. During Hurricane Sandy, power outages also occurred, and only two properties (the pavilion at Robinson Lane recreational area and the local docks) were noted as being damaged.

The Town is currently in good standing in the NFIP. The current NFIP Floodplain Administrator indicates the Village's last CAV was performed in 2003. The municipality sees no specific need for a CAV at this time.

Regulatory

The Town's Flood Damage Prevention Ordinance (FDPO) was last reviewed and updated in March 2012, where necessary, and is found in Chapter 133.

Floodplain management regulations and ordinances meet the FEMA and New York State minimum requirements. There are additional ordinances, plans, and programs within the Town, including the Town Site Plan and Planning Board Subdivision Reviews, further supporting the enforcement of the floodplain management program.

Community Rating System

The Town of Wappinger does not participate in the Community Rating System (CRS) program.

Integration of Hazard Mitigation into Existing and Future Planning Mechanisms

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. As part of this planning effort, each community was surveyed to obtain a better understanding of their community's progress in plan integration. A summary is provided below. In addition, the community identified specific integration activities that will be incorporated into municipal procedures.

Planning

Land Use Planning: The Town has a Planning Board and Zoning Board of Appeals which review all applications for development and consider natural hazard risk areas in their review. Many development activities require additional levels of environmental review, specifically NYS SEQR and Federal NEPA requirements.

Town of Wappinger Comprehensive Plan 2010: The Town completed a Comprehensive Plan which included the identification of natural hazard risk areas like floodplains, wetlands, and steep slopes, as well as land use and zoning recommendations for managing those risks. Some of the recommendations included the following:

1. Consider in the future increasing the 100-foot buffer requirement for wetland and water course buffers in proposed open space corridors (along the Hudson River, Wappinger Creek, and Sprout Creek) to facilitate habitat protection.
2. Regulate the development of floodplains, wetlands, stream corridors, steep slopes and ridge lines to ensure minimal disruption of their environmental functions and scenic qualities.
3. Reevaluate and consider strengthening the Town's Wetlands Protection Law on a regular basis to ensure that it is current relative to the appropriate protection of the environment.



4. Protect significant natural features such as wetlands, streams, steep slopes, and ridge lines through better management of information systems, including GIS, to enhance the evaluation during development review and approval process.

Regulatory and Enforcement

Flood Damage Prevention Chapter 133: It is the purpose of this chapter to promote the public health, safety, and general welfare and to minimize public and private losses due to flood conditions in specific areas by provisions designed to:

- A. Regulate uses which are dangerous to health, safety and property due to water or erosion hazards or which result in damaging increases in erosion or in flood heights or velocities;
- B. Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
- C. Control the alteration of natural floodplains, stream channels, and natural protective barriers which are involved in the accommodation of floodwaters;
- D. Control filling, grading, dredging and other development which may increase erosion or flood damages;
- E. Regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards to other lands; and
- F. Qualify for and maintain participation in the National Flood Insurance Program.

Freshwater Wetland, Water Body, and Water Course Protection Chapter 137: It is declared to be the public policy of the Town of Wappinger to preserve, protect and conserve freshwater wetlands, waterbodies and watercourses and the benefits derived therefrom and to prevent the despoliation and destruction of such freshwater resources by regulating activities with potential impacts to such resources in order to secure their natural benefits consistent with the general health, safety and welfare of the public, and with the beneficial economic, social and agricultural development of the Town of Wappinger. It is further declared to be the policy of the Town of Wappinger to exercise its authority pursuant to Article 24 of the State Environmental Conservation Law.

Zoning Code Chapter 240: Wappinger's zoning code includes districts and standards pertaining to the mitigation of hazards.

Site Plan/Subdivision Review Chapter 217: The Town's Planning Board is tasked with site plan/subdivision review. The Planning board pays special attention to ensure that developments mitigate the issues associated with flooding or steep slopes.

Building Code Chapter 85: The building codes are strictly enforced to make new and renovated buildings as prepared as possible for hazard related incidents. The chapter includes a provision to allow the building inspector to make emergency repairs to protect the health safety and welfare of the residents.

Fiscal

Operating Budget: The Town's operating budget and Highway Department budget contain minimal provisions for expected repairs like snow removal and infrastructure repair after a storm or natural disaster.

Education and Outreach

The Town includes announcements on the home page and includes links and contact info for all town personal and emergency response resources. The Planning Department is a member of the Dutchess County Planning Federation and attends trainings and researches best practices that other communities are implementing. The



Town has planned to budget for training for personal including professional development geared towards health and safety.

9.22.6 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and prioritization.

Past Mitigation Initiative Status

The following table indicates progress on the community's mitigation strategy identified in the 2010 Plan. Actions that are carried forward as part of this Plan are included in the following subsection in its own table with prioritization. Previous actions that are now on-going programs and capabilities are indicated as such in the following table and may also be found under 'Capability Assessment' presented previously in this annex.



Table 9.22-11. Past Mitigation Initiative Status

2010 Mitigation Action	Responsible Party	Status (In progress, No progress, Complete)	Describe Status	Next Step (Include in 2015 HMP? or Discontinue)	Describe Next Step
Berm built at Robinson Lane recreation ball fields	Highway Super. and Town Engineer	Complete	2012 Constructed a berm to protect baseball fields from incidental flooding of the Sprout Creek. 100% complete. No outside funding required.	N/A	N/A



Completed Mitigation Initiatives not Identified in the Previous Mitigation Strategy

The Town of Wappinger has identified the following mitigation projects/activities that have also been completed but were not identified in the previous mitigation strategy in the 2010 Plan:

- Replaced 40+ year old steel galvanized pipe at Granger Place at an estimated cost of \$950,000.

Proposed Hazard Mitigation Initiatives for the Plan

The Town of Wappinger participated in a mitigation action workshop in March 2015 and was provided the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 'Selecting Appropriate Mitigation Measures for Floodprone Structures' (March 2007) and FEMA 'Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards' (January 2013). In May 2015, the Town of Wappinger participated in a second workshop and was provided the results to the risk assessment to further assist with the identification of mitigation actions.

Table 9.22-12 summarizes the comprehensive-range of specific mitigation initiatives the Town of Wappinger would like to pursue in the future to reduce the effects of hazards. Some of these initiatives may be previous actions carried forward for this Plan. These initiatives are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. Both the four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

As discussed in Section 6, 14 evaluation/prioritization criteria are used to complete the prioritization of mitigation initiatives. For each new mitigation action, a numeric rank is assigned (-1, 0, or 1) for each of the 14 evaluation criteria to assist with prioritizing your actions as 'High', 'Medium', or 'Low.' The table below summarizes the evaluation of each mitigation initiative, listed by Action Number.

Table 9.22-13 provides a summary of the prioritization of all proposed mitigation initiatives for the Plan.



Table 9.22-12. Proposed Hazard Mitigation Initiatives

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category	CRS Category
TW-1	Minimize future power outages due to downed power lines - Consider requiring underground utilities for any new development, and work with Planning Board so that burying utilities is promoted in development plans.	Both	Power Outage	1, 2	Planning Board, Highway Department, Town Engineer	Prevent power outages	Low	Town Budget	Short	Low	LPR, SIP	PR
TW-2	Improve disaster resistance of Hughsonville Fire Department.	Existing	Flood, Power Outage, Fire	5	Hughsonville Fire Department	Maintain operations of fire department personnel during emergencies.	Medium	Grants	Short	High	SIP	PP, ES
TW-3	Develop a Communications and Continuity of Operations Plan including an emergency notification system to ensure all personnel have access to emergency notifications, via various communications devices, and to reduce the disruption of essential services when an emergency situation occurs.	N/A	All hazards	5, 7	Town Board	Ensure communications during emergencies.	Low-Med	Grants	Short	Medium	LPR	ES
TW-4	Rehabilitate Woodhill Green Water System by running a water main to the site's aquifers. This will help mediate the state of advanced failure noted by Dutchess County Department of Health, ensuring residents having continuous access to clean drinking water. This project will also benefit a large number of elderly residents who are on a fixed-income.	Both	All hazards	1, 2	Town Board, Water and Sewer	Protect public health and reduce vulnerability of drinking water resources	High (\$2,213,107)	Grants, Local Budget	DOF	Low	NSP, SIP	PP, NR
TW-5	Mitigate the continued and increasing deterioration of the Town's stormwater and wastewater management systems. This deterioration has impacted storm drains, road berms and beds, and inflow and infiltration of stormwater in wastewater facilities. Projects under consideration include: <ul style="list-style-type: none"> Replace approximately 4,000 ft. of storm drain in the center median of Wildwood Drive (estimated cost of \$1.8M) 											



Table 9.22-12. Proposed Hazard Mitigation Initiatives

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category	CRS Category
	<ul style="list-style-type: none"> Replace 40+ year old steel galvanized pipe at Granger Place (estimated cost of \$950k) Provide new 48" culvert crossing under Dutchess County Rail Trail that dams up water and floods properties along Smith Crossing Road (estimated cost of \$500K) Replace undersized culvert that crosses Smithtown Road and currently causes flooding in the road (estimated cost of \$100k) Re-berm/pave town roads (Estimated cost of \$5M to catch up on paving work and shaping roads for appropriate drainage) Sewer piping network of approximately 60 miles (300,000 feet) of pipe and severe infiltration and inflow repairs (estimated costs at \$6.9 million) 											
	See above.	Existing	Stormwater management	Replacement of aging infrastructure	Town Board of the Town of Wappinger; Highway Department and Town Engineer of the Town of Wappinger	Reduce risk to property damage from flooding	High	Grants, Town Budget	Short	High	SIP	PP
TW-6	Promote and support non-structural flood hazard mitigation alternatives for at risk properties within the floodplain, including those that have been identified as Repetitive Loss (RL – 2 currently) and Severe Repetitive Loss (SRL – 0 currently), such as acquisition/relocation or elevation depending on feasibility. The parameters for this initiative would be: funding, benefits versus cost and willing participation of property owners.											
	See above.	Existing	Flooding, Severe Storm	2, 3	Municipal NFIP FPA; support from NYSOEM and FEMA	High - Reduced or eliminated risk to property damage from flooding	High	FEMA or other mitigation grant funding, NFIP flood insurance and ICC; property owner for local match.	Long-term DOF	High	SIP, EAP	PP, PI
TW-7	Public Outreach: Public outreach / education / mitigation information about natural hazard risks.											
	See mitigation action worksheet.	Existing and new	All hazards	Public outreach on hazard mitigation	Town Board of the Town of Wappinger; Planning Board	See mitigation action worksheet.	Low <\$10,000	No separate funding required.	End of year 2015, and continuing into following years.	High	EAP	PI
TW-8	Wildwood Drive Storm Drain Pipe Replacement: Replace approximately 4000 LF of storm drain pipe in median of Wildwood Drive. (work has been partially completed)											
	See mitigation action	Existing	Stormwater	Replacement	Town Board	See mitigation	High, \$1.8 M	No	End of	High	SIP	PP



Table 9.22-12. Proposed Hazard Mitigation Initiatives

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category	CRS Category
	worksheet.		management	of aging infrastructure	of the Town of Wappinger; Highway Department and Town Engineer of the Town of Wappinger	action worksheet.	(work partially completed)	separate funding required.	year 2016, and continuing into following years.			
TW-9	Smithtown Road Culvert Replacements: Obtain easements and construct swales in easements on Petinella and Jalaj properties from culvert under Smithtown Road to culvert under US Route 9. Replace undersized culvert under Smithtown Road that currently causes road flooding.											
	See mitigation action worksheet.	Existing	Continued and increasing deterioration of the Town's stormwater systems	Replacement of aging infrastructure	Town Board of the Town of Wappinger; Highway Department and Town Engineer of the Town of Wappinger	See mitigation action worksheet.	High, \$500,000	No separate funding required.	End of year 2016.	High	SIP	PP
TW-10	Smith Crossing Road Rail Trail Culvert: Construct new 48" dia. culvert under the Dutchess County Rail Trail to relieve flooding caused by the trail embankment damming water and flooding properties along Smith Crossing Road.											
	See mitigation action worksheet.	Existing	Continued and increasing deterioration of the Town's stormwater systems	Relief of local flooding problem	Town Board of the Town of Wappinger; Highway Department and Town Engineer of the Town of Wappinger in cooperation with the DCDPW engineering dept.	See mitigation action worksheet.	High, \$500,000	No separate funding required.	End of year 2016.	High	SIP	PP
TW-11	Notify and provide needed support to the facility manager/operator of the 7-Eleven #25393 to evaluate the	Existing	Flood, Severe Storms	2, 3	Municipal NFIP FPA	High – Reduced Risk to Critical Facility	Low	Staff Time, FEMA, NYS	Short	Medium	EAP, LPR	PI, PP



Table 9.22-12. Proposed Hazard Mitigation Initiatives

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category	CRS Category
	facility's flood vulnerability and to identify feasible mitigation options. Assure any mitigation addresses the 500-year flood event or "worst damage scenario".							DHSES, County, Municipal				
TW-12	The Town will investigate mitigation opportunities to further strengthen local critical facilities, specifically the Mid-Point Park – Royal Ridge WTP, Rockingham Farms WTP, and Wappinger Well when they arise and as funding is feasible. Assure that any mitigation addresses the 500-year flood event or "worst damage scenario".	Existing	Flood, Severe Storms	2, 3	Municipal NFIP FPA	High – Reduced Risk to Critical Facility	Low	Staff Time, FEMA, NYS DHSES, County, Municipal	Short	Medium	EAP, LPR	PI, PP
TW-13	Redesign and construct stormwater management infrastructure for the New Hamburg drainage system to provide adequate flow managements for a 50-year storm event. This project will involve multi-jurisdictional cooperation between the Town and the County.	Existing	Flood, Severe Storm	2, 4, 5	County Planning, Municipal NFIP FPA, Municipal DPW	High – Proximity to Wappingers Creek Watershed and Hudson River Estuary	Medium/High	FEMA, CDBG, NYS DHSES, County, Municipal	Short	High	SIP	PP

Notes:

Not all acronyms and abbreviations defined below are included in the table.

*Does this mitigation initiative reduce the effects of hazards on new and/or existing buildings and/or infrastructure? Not applicable (N/A) is inserted if this does not apply.

Acronyms and Abbreviations:

CAV	Community Assistance Visit
CRS	Community Rating System
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
FPA	Floodplain Administrator
HMA	Hazard Mitigation Assistance

Potential FEMA HMA Funding Sources:

FMA	Flood Mitigation Assistance Grant Program
HMGP	Hazard Mitigation Grant Program
PDM	Pre-Disaster Mitigation Grant Program
RFC	Repetitive Flood Claims Grant Program (discontinued)
SRL	Severe Repetitive Loss Grant Program (discontinued)

Timeline:

Short	1 to 5 years
Long Term	5 years or greater
OG	On-going program
DOF	Depending on funding





Acronyms and Abbreviations:

N/A	Not applicable
NFIP	National Flood Insurance Program
OEM	Office of Emergency Management

Potential FEMA HMA Funding Sources:

Timeline:

Costs:

Where actual project costs have been reasonably estimated:

Low	< \$10,000
Medium	\$10,000 to \$100,000
High	> \$100,000

Where actual project costs cannot reasonably be established at this time:

Low	Possible to fund under existing budget. Project is part of, or can be part of an existing on-going program.
Medium	Could budget for under existing work plan, but would require a reapportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.
High	Would require an increase in revenue via an alternative source (i.e., bonds, grants, fee increases) to implement. Existing funding levels are not adequate to cover the costs of the proposed project.

Benefits:

Where possible, an estimate of project benefits (per FEMA's benefit calculation methodology) has been evaluated against the project costs, and is presented as:

Low=	< \$10,000
Medium	\$10,000 to \$100,000
High	> \$100,000

Where numerical project benefits cannot reasonably be established at this time:

Low	Long-term benefits of the project are difficult to quantify in the short term.
Medium	Project will have a long-term impact on the reduction of risk exposure to life and property, or project will provide an immediate reduction in the risk exposure to property.
High	Project will have an immediate impact on the reduction of risk exposure to life and property.

Mitigation Category:

- Local Plans and Regulations (LPR) – These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.
- Structure and Infrastructure Project (SIP)- These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.
- Natural Systems Protection (NSP) – These are actions that minimize damage and losses, and also preserve or restore the functions of natural systems.
- Education and Awareness Programs (EAP) – These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities

CRS Category:

- Preventative Measures (PR) - Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.
- Property Protection (PP) - These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.
- Public Information (PI) - Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.
- Natural Resource Protection (NR) - Actions that minimize hazard loss and also preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
- Structural Flood Control Projects (SP) - Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.
- Emergency Services (ES) - Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities



Table 9.22-13. Summary of Prioritization of Actions

Mitigation Action/ Project Number	Mitigation Action/Initiative	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
TW-1	Minimize future power outages due to downed power lines - Consider requiring underground utilities for any new development, and work with Planning Board so that burying utilities is promoted in development plans.	1	0	-1	-1	1	1	1	-1	1	1	1	1	-1	1	3	Low
TW-2	Improve disaster resistance of Hughsonville Fire Department.	1	1	-1	1	1	1	1	-1	1	1	1	1	-1	1	8	High
TW-3	Develop a Communications and Continuity of Operations Plan including an emergency notification system to ensure all personnel have access to emergency notifications, via various communications devices, and to reduce the disruption of essential services when an emergency situation occurs.	1	0	1	1	-1	1	1	0	1	1	1	1	-1	1	6	Medium
TW-4	Rehabilitate Woodhill Green Water System by running a water main to the site's aquifers. This will help mediate the state of advanced failure noted by Dutchess County Department of Health, ensuring residents having continuous access to clean drinking water. This project will also benefit a large number of elderly residents who are on a fixed-income.	1	0	1	-1	-1	-1	-1	1	1	-1	1	-1	1	1	0	Low
TW-5	Mitigate the continued and increasing deterioration of the Town's stormwater and wastewater management systems. This deterioration has impacted storm drains, road berms and beds, and inflow and infiltration of stormwater in wastewater facilities.	1	1	0	1	1	0	0	1	0	1	1	0	1	0	8	High
TW-6	Promote and support non-structural flood hazard mitigation alternatives for at risk properties within the floodplain, including those that have been identified as Repetitive Loss (RL – 2 currently) and Severe Repetitive Loss (SRL – 1 currently), such as acquisition/relocation or elevation depending on feasibility. The parameters for this initiative would be: funding, benefits versus cost and willing participation of property owners.	1	1	1	0	0	0	1	1	1	0	0	0	1	0	7	Medium
TW-7	Public Outreach: Public outreach / education / mitigation information about natural hazard risks.	0	0	1	1	1	0	1	0	0	1	1	1	0	0	7	High
TW-8	Wildwood Drive Storm Drain Pipe Replacement: Replace approximately 4000 LF of storm drain pipe in median of Wildwood Drive. (work has been partially completed)	1	1	1	1	1	0	-1	1	0	1	1	1	1	0	8	High
TW-9	Smithtown Road Culvert Replacements: Obtain easements and construct swales in easements on Petinella and Jalaj properties from culvert under Smithtown Road to culvert under US Route 9. Replace undersized culvert under Smithtown Road that currently causes road flooding.	1	1	1	1	0	0	-1	0	0	1	1	1	1	0	7	High
TW-10	Smith Crossing Road Rail Trail Culvert: Construct new 48" dia. culvert under the Dutchess County Rail Trail to relieve flooding caused by the trail embankment damming water and flooding properties along Smith Crossing Road.	1	1	0	1	1	0	1	0	0	1	1	1	1	0	9	High
TW-11	Notify and provide needed support to the facility manager/operator of	0	1	1	0	0	0	1	0	1	1	1	1	0	0	7	Medium



Table 9.22-13. Summary of Prioritization of Actions

Mitigation Action/ Project Number	Mitigation Action/Initiative	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
	the 7-Eleven #25393 to evaluate the facility's flood vulnerability and to identify feasible mitigation options. Assure any mitigation addresses the 500-year flood event or "worst damage scenario".																
TW-12	The Town will investigate mitigation opportunities to further strengthen local critical facilities, specifically the Mid-Point Park – Royal Ridge WTP, Rockingham Farms WTP, and Wappinger Well when they arise and as funding is feasible.	0	1	1	0	0	0	1	0	1	1	1	1	0	0	7	Medium
TW-13	Redesign and construct stormwater management infrastructure for the New Hamburg drainage system to provide adequate flow managements for a 50-year storm event. This project will involve multi-jurisdictional cooperation between the Town and the County.	1	1	1	1	1	0	-1	1	1	0	1	1	1	1	10	High

Note: Refer to Section 6 which contains the guidance on conducting the prioritization of mitigation actions.



9.22.7 Future Needs To Better Understand Risk/Vulnerability

None at this time.

9.22.8 Hazard Area Extent and Location

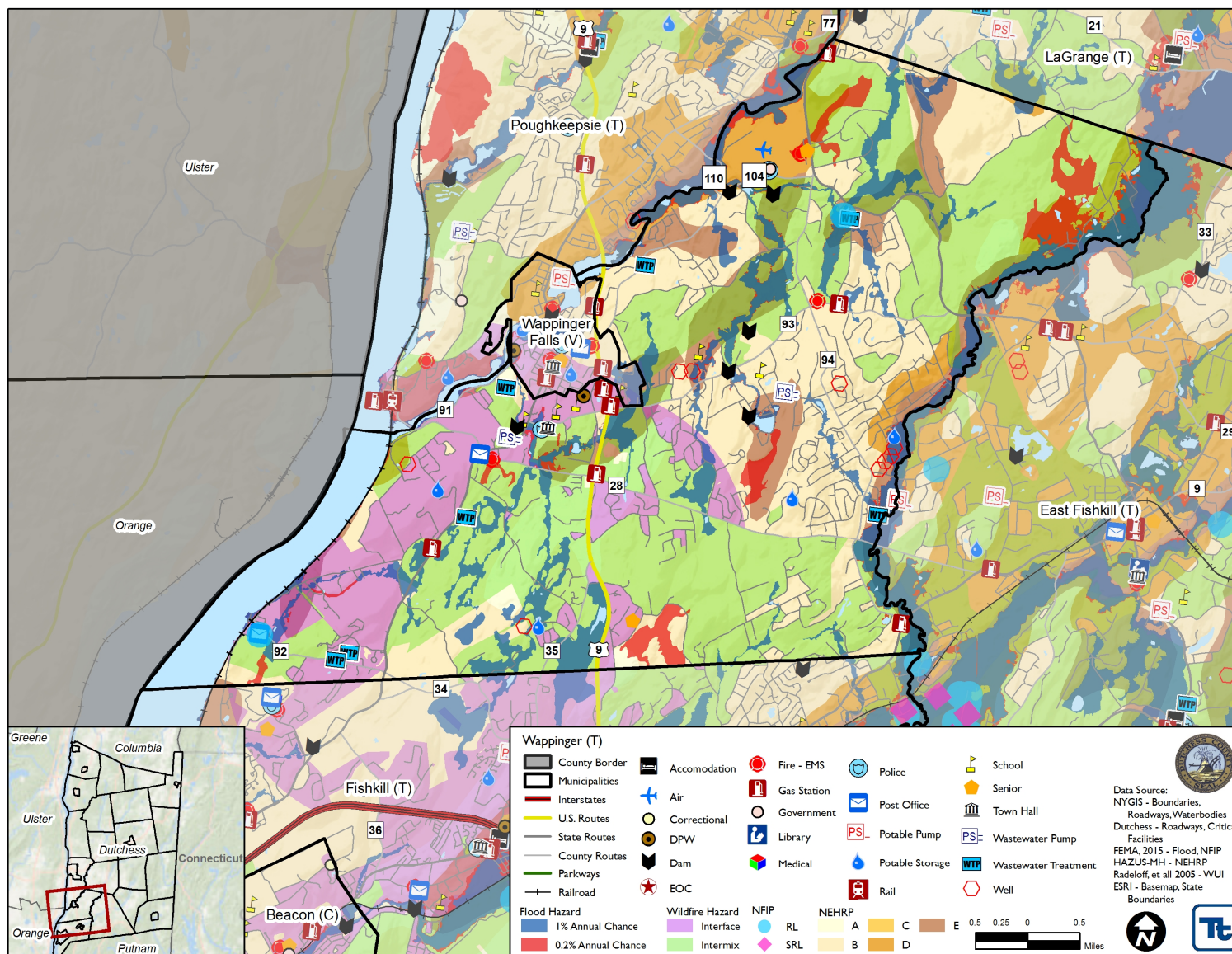
Hazard area extent and location maps have been generated for the Town of Wappinger that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan, and are considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the Town of Wappinger has significant exposure. These maps are illustrated in the hazard profiles within Section 5.4, Volume I of this Plan.

9.22.9 Additional Comments

None at this time.



Figure 9.22-1. Town of Wappinger Hazard Area Extent and Location Map





Action Number:

TW – 7

Mitigation Action/Initiative:

Public Outreach

Assessing the Risk	
Hazard(s) addressed:	All Hazards
Specific problem being mitigated:	Increasing public awareness
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	For RL and SRL properties, mitigation of vulnerable structures via acquisition or relocation was not selected due to the high cost to Town taxpayers for individual properties that would have benefitted.
Action/Project Intended for Implementation	
Description of Selected Action/Project	Public outreach / education / mitigation information about natural hazard risks
Action/Project Category	<ul style="list-style-type: none"> A. Provide FEMA published general natural hazard risk preparedness and mitigation information at the Town Hall outside the Town Clerk's office. Consider placing similar information at the Library (in the Village of Wappinger Falls). B. Post flyers and other readily available NFIP informational materials at the Town Hall outside the Town Clerk's office. Consider placing similar information at the Library (in the Village of Wappinger Falls). C. Post flyers and other readily available NFIP informational materials at the Town Hall in the Building Department office. D. Set up a space at the Wappinger Community Day to distribute the materials in A and B above.
Goals Met	Public outreach on hazard mitigation.
Applies to existing and new development, or not applicable	Applies to existing and new development.
Benefits (losses avoided)	The Town will benefit due to lower disaster recovery costs, and individual property owners will benefit due to lower repair or restoration expenses, by using the information and implementing the suggested strategies.
Estimated Cost	Low <\$10,000
Priority*	High
Plan for Implementation	
Responsible Organization	Town Board of the Town of Wappinger
Local Planning Mechanism	Planning Board of the Town of Wappinger
Potential Funding Sources	No separate funding required.
Timeline for Completion	End of year 2015, and continuing into following years.
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:



Action Number: TW – 7
 Mitigation Action/Initiative: Public Outreach

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	Outreach is passive with respect to actual mitigation measures taken, which must be done by individual property owners.
Property Protection	0	
Cost-Effectiveness	1	Both the Town and individual property owners will receive significant value for minimal expenditure.
Technical	1	The FEMA and NFIP materials to be distributed or made available have been prepared and reviewed by competent federal agency staff.
Political	1	The outreach program will show the voters that their elected officials are concerned about the community welfare.
Legal	0	The outreach program has no legal standing.
Fiscal	1	The outreach program will not require separate funding and can be implemented at low cost to the Town.
Environmental	0	Outreach is passive with respect to actual mitigation measures taken, which must be done by individual property owners.
Social	0	Outreach is passive with respect to actual mitigation measures taken, which must be done by individual property owners.
Administrative	1	The outreach program will not require separate funding and can be implemented at low cost to the Town using existing staff.
Multi-Hazard	1	The outreach program scope includes all hazards, with special emphasis on the NFIP.
Timeline	1	The outreach program can be initiated in the short term.
Agency Champion	0	There is no spokesperson for the outreach program. It will be supervised by the Town Supervisor.
Other Community Objectives	0	
Total	7	
Priority (High/Med/Low)	High	



Action Number:

TW – 8

Mitigation Action/Initiative:

Wildwood Drive Storm Drain Pipe Replacement

Assessing the Risk	
Hazard(s) addressed:	Stormwater management
Specific problem being mitigated:	Continued and increasing deterioration of the Town's stormwater systems
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	
Action/Project Intended for Implementation	
Description of Selected Action/Project	(Project No. 1): Replace approximately 4000 LF of storm drain pipe in median of Wildwood Drive. (work has been partially completed)
Action/Project Category	Work by Town and private contractor to replace pipe and related catch basins and restore median and roadway
Goals Met	Replacement of aging infrastructure
Applies to existing and new development, or not applicable	Applies to existing.
Benefits (losses avoided)	The Town will benefit due to lower disaster recovery costs, including road repairs. Individual property owners will benefit due to lower repair or restoration expenses from flooding damage.
Estimated Cost	High, \$1.8 M (work partially completed)
Priority*	High
Plan for Implementation	
Responsible Organization	Town Board of the Town of Wappinger
Local Planning Mechanism	Highway Department and Town Engineer of the Town of Wappinger
Potential Funding Sources	No separate funding required.
Timeline for Completion	End of year 2016, and continuing into following years.
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:



Action Number:

TW – 8

Mitigation Action/Initiative:

Wildwood Drive Storm Drain Pipe Replacement

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Ensure safety of roadway for transportation use.
Property Protection	1	Reduce likelihood of flood damages to structures in the area.
Cost-Effectiveness	1	In contrast to other mitigation actions and the frequency of flood repairs to this area
Technical	1	Technical plans are approved and work is already partially completed.
Political	1	Benefits motorists and residents.
Legal	0	
Fiscal	-1	Expense
Environmental	0	Limited environmental benefit or impact
Social	0	
Administrative	1	The project can be implemented using existing staff/contractors.
Multi-Hazard	1	The project reduces the vulnerability to flood and severe storm hazard.
Timeline	1	End of year 2016, and continuing into following years.
Agency Champion	1	Town Board of the Town of Wappinger; Highway Department and Town Engineer of the Town of Wappinger
Other Community Objectives	0	
Total	8	
Priority (High/Med/Low)	High	



Action Number:

TW – 9

Mitigation Action/Initiative:

Smithtown Road Culvert Replacements

Assessing the Risk	
Hazard(s) addressed:	Stormwater management
Specific problem being mitigated:	Continued and increasing deterioration of the Town's stormwater systems
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	1. Do nothing – problem continues and worsens
	2. Smithtown Road Culvert Replacements
	3.
Action/Project Intended for Implementation	
Description of Selected Action/Project	(Project No. 2): Obtain easements and construct swales in easements on Petinella and Jalaj properties from culvert under Smithtown Road to culvert under US Route 9. Replace undersized culvert under Smithtown Road that currently causes road flooding.
Action/Project Category	Work by Town to obtain easement and private contractor to construct swale and replace pipe and related property and roadway restoration.
Goals Met	Replacement of aging infrastructure
Applies to existing and new development, or not applicable	Applies to existing.
Benefits (losses avoided)	The Town will benefit due to lower disaster recovery costs, including road repairs. Individual property owners will benefit due to lower repair or restoration expenses from flooding damage.
Estimated Cost	High, \$100 K
Priority*	High
Plan for Implementation	
Responsible Organization	Town Board of the Town of Wappinger
Local Planning Mechanism	Highway Department and Town Engineer of the Town of Wappinger
Potential Funding Sources	No separate funding required.
Timeline for Completion	End of year 2016.
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:



Action Number:

TW – 9

Mitigation Action/Initiative:

Smithtown Road Culvert Replacements

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Ensure safety of roadway for transportation use and possible life-safety benefits with regard to emergency access to private property.
Property Protection	1	Reduced risk of private property damage to flooding.
Cost-Effectiveness	1	Both the Town and individual property owners will receive significant value for minimal expenditure.
Technical	1	Town has the technical capabilities to replace culverts.
Political	0	
Legal	0	Town currently has limited authority over private property, but can enhance their maintenance capabilities with easements
Fiscal	-1	Expense
Environmental	0	Limited environmental benefit or impact
Social	0	
Administrative	1	Town has the administrative capabilities to complete project work.
Multi-Hazard	1	The project reduces the vulnerability to flood and severe storm hazard.
Timeline	1	End of year 2016.
Agency Champion	1	Town Board of the Town of Wappinger; Highway Department and Town Engineer of the Town of Wappinger
Other Community Objectives	0	
Total	7	
Priority (High/Med/Low)	High	



Action Number:

TW – 10

Mitigation Action/Initiative:

Smith Crossing Road Rail Trail Culvert

Assessing the Risk	
Hazard(s) addressed:	Stormwater management
Specific problem being mitigated:	Continued and increasing deterioration of the Town's stormwater systems
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	1. Do nothing – problem continues and worsens
	2. Smith Crossing Road Rail Trail Culvert
	3.
Action/Project Intended for Implementation	
Description of Selected Action/Project	(Project No. 3): Construct new 48" dia. culvert under the Dutchess County Rail Trail to relieve flooding caused by the trail embankment damming water and flooding properties along Smith Crossing Road.
Action/Project Category	Work by Town and private contractor to replace pipe and restore railway
Goals Met	Relief of local flooding problem
Applies to existing and new development, or not applicable	Applies to existing development.
Benefits (losses avoided)	The Town will benefit due to lower disaster response costs, including emergency responders such as fire, police and ambulance. Individual property owners will benefit due to lower repair or restoration expenses from flooding damage.
Estimated Cost	High, \$500 K
Priority*	High
Plan for Implementation	
Responsible Organization	Town Board of the Town of Wappinger
Local Planning Mechanism	Highway Department and Town Engineer of the Town of Wappinger in cooperation with the DCDPW engineering dept.
Potential Funding Sources	No separate funding required.
Timeline for Completion	End of year 2016
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:



Action Number: TW – 10
Mitigation Action/Initiative: Smith Crossing Road Rail Trail Culvert

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Ensure safety of roadway for transportation use and possible life-safety benefits with regard to emergency access to private property.
Property Protection	1	Reduced risk of private property damage to flooding.
Cost-Effectiveness	0	
Technical	1	Town and private contractor have the technical capabilities to replace culverts.
Political	1	Plan is supported by the Town Board.
Legal	0	
Fiscal	1	No separate funding is required.
Environmental	0	Limited environmental benefit or impact
Social	0	
Administrative	1	Town has the administrative capabilities to complete project work through the Highway Department and Town Engineer of the Town of Wappinger in cooperation with the DCDPW engineering dept.
Multi-Hazard	1	The project reduces the vulnerability to flood and severe storm hazard.
Timeline	1	End of year 2016.
Agency Champion	1	Town Board of the Town of Wappinger
Other Community Objectives	0	
Total	9	
Priority (High/Med/Low)	High	



Action Number:

TW – 13

Mitigation Action/Initiative:

New Hamburg Drainage System Redesign and Construction

Assessing the Risk	
Hazard(s) addressed:	Stormwater management, flood, and severe storm
Specific problem being mitigated:	New Hamburg Rd. runs from the Hughsonville hamlet in the Town of Wappinger to the hamlet of New Hamburg, which serves as a station point for MetroNorth Railroad. The 19th century municipal drainage system served a now-abandoned roadway parallel to the current New Hamburg Rd. that runs from State Route 9D to a holding pond directly above the lower Wappinger Creek. Many of the lines have collapsed and culvert facilities are inadequate to the task of effectively managing the dispersal of the runoff. The existing failed drainage system's faults are exacerbated by storm water that drains through culverts under New Hamburg Rd which are owned and maintained by Dutchess County.
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	1. Do nothing – problem continues and worsens 2. Design and construct new storm drains and culverts - selected 3.
Action/Project Intended for Implementation	
Description of Selected Action/Project	A comprehensive redesign and construction of storm water management infrastructure is required. It entails the design and construction of storm drains and culverts to provide adequate management of water flows in the context of a 50-year storm event.
Action/Project Category	SIP
Goals Met	2, 4, 5
Applies to existing and new development, or not applicable	Existing (culverts and other drainage mechanisms)
Benefits (losses avoided)	Avoid impacting the Wappingers Creek Watershed and Hudson River Estuary (water quality, water flow, recreational use, etc.)
Estimated Cost	Medium/High - \$993,110
Priority*	High
Plan for Implementation	
Responsible Organization	Dutchess County and the Town of Wappinger (New Hamburg Road is owned by Dutchess County, not Town)
Local Planning Mechanism	Town NFIP FPA in cooperation with County Planning and Town DPW
Potential Funding Sources	FEMA, CDBG, NYS DHSES, County, Municipal
Timeline for Completion	Short
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:



Action Number:

TW – 13

Mitigation Action/Initiative:

New Hamburg Drainage System Redesign and Construction

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Reduces accident risk from overflows and stormwater flooding in that area
Property Protection	1	New Hamburg Road and other local structures/infrastructure
Cost-Effectiveness	1	Avoid costly repairs from failing drainage system (long-term benefits)
Technical	1	Chazen Companies has technical experience to perform repairs
Political	1	
Legal	0	
Fiscal	-1	
Environmental	1	Reduces impacts to Wappingers Creek Watershed and Hudson River Estuary
Social	1	
Administrative	0	
Multi-Hazard	1	Stormwater, Flood, Severe Storms
Timeline	1	
Agency Champion	1	Town and County project
Other Community Objectives	1	Increases collaboration and partnerships with County
Total	10	
Priority (High/Med/Low)	High	